

TECHNOLOGY ASSESSMENT BRIEF

Picture Archiving and Communication Systems Report #5

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Primary Objective: To define significant issues and frame potential research questions related to the use of picture archiving and communication systems (PACS) in clinical settings, and to clarify what is known about the impact of PACS in clinical settings.

Methods Used: Systematic review of published evidence on clinical performance and financial impact of PACS.

Background: PACS are high-speed, graphical, computer network systems used for the storage, retrieval, and display of radiologic images. They may be implemented over networks to provide remote access to patient information and to support teleradiology.

Key Findings: Few studies provide scientifically sound evidence on the clinical effectiveness, efficiency, and cost-effectiveness of PACS; • research did not consistently show the diagnostic accuracy of digital imaging (read on PACS workstations or printed to film) to be equal to that of conventional X-ray film; • PACS saved time generating, retrieving, and delivering images, but overall, physicians did not receive results of imaging exams any sooner; • the impact of PACS on patient outcomes was unclear; • two early studies showed wide variation in reported costs and benefits of PACS, with no consistent conclusions regarding cost-effectiveness.

Conclusions/Recommendations:

- Clarify and disseminate strategic goals and objectives for VA telemedicine activities.
- Strengthen oversight and coordination of PACS and other telemedicine technologies within VA and among federal agencies.
- Further integrate management and economic research methods into PACS assessments to better capture costs and effects. Strengthen working relationships among health care economists, management researchers, and clinical researchers within VA.
- Practice evidence-based decision making and purchasing. Require and fund more rigorous evaluation of cost-effectiveness before broadly disseminating PACS.
- Assess information technologies from an institutional perspective.
- Continue to support test beds for the refinement and evaluation of commercial PACS and in-house image management systems.